

Mr. Berment's US HEALTH – UNIT 1

NUTRITION & EXERCISE

**WHAT TO KNOW
WHEN
CHOOSING
HEALTHY FOODS**

What You Will Learn

- We will identify the functions and sources of the foods we need.
- We will identify the sources of vitamins and minerals
- We will learn how to read the nutrition label and identify the five elements required on all food labels

CHOOSING HEALTHY FOODS

**WHAT SHOULD WE EAT? WHAT
SHOULD WE AVOID?**

PROTEINS



FATS



CARBOHYDRATES



VITAMINS & MINERALS



CHOOSING HEALTHY FOODS

- **PROTEINS** – There are two kinds of proteins
 - Complete – contains all essential amino acids. Examples of complete proteins are: meat, fish, poultry, milk, eggs and yogurt. They have several important functions in the body including regulate body processes, supply energy, forming keratin for the skin, hair and nails and collagen in bone and other connective tissue.
 - Incomplete – a protein from plant sources that does not contain all the essential amino acids. Incomplete proteins fall into three categories: grains, legumes and nuts and seeds.

CHOOSING HEALTHY FOODS

- **Amino Acids** - Amino acids are organic compounds that combine to form [proteins](#). Amino acids and proteins are the building blocks of life.
- When proteins are digested or broken down, amino acids are left. The human body uses amino acids to make proteins to help the body:
 - Break down food
 - Grow
 - Repair body tissue
 - Perform many other body functions
- Amino acids can also be used as a source of energy by the body.

Quick Quiz

- Name three sources that are considered complete proteins?
 - Meats
 - Poultry
 - Eggs
 - Fish
 - Milk

Quick Quiz

- Define an Incomplete Protein
 - a protein from plant sources that does not contain all the essential amino acids.
- What are the three categories of Incomplete proteins?
 - Incomplete proteins fall into three categories: grains, legumes and nuts and seeds

CHOOSING HEALTHY FOODS

- **Carbohydrates –**

- The main source of energy for the body. They include sugars, starches and fiber. Your body can only store a limited amount of carbs (4 calories of energy per gram of food). Excess carbs are stored as fat. Sources of carbs include: vegetables, beans, potatoes, pasta, breads, rice, bran, popcorn and fruit.

CHOOSING HEALTHY FOODS

There are two types of Carbohydrates

- Simple Carbs
 - are broken down quickly by the body to be used as energy. **Simple carbohydrates** are found naturally in foods such as fruits, milk, and milk products. They are also found in processed and refined sugars such as candy, table sugar, syrups, and soft drinks.
- Complex Carbs
 - are made up of sugar molecules that are strung together in long, **complex** chains. **Complex carbohydrates** are found in foods such as peas, beans, whole grains, and vegetables. Both simple and **complex carbohydrates** are turned to glucose (blood sugar) in the body and are used as energy.

CHOOSING HEALTHY FOODS

Examples of Simple Carbs -

- Baked goods (including bread) made with white flour
- Cake
- Candy
- Candy bar
- Carbonated drink
- Chocolate
- Cookie
- Corn syrup
- Fruit juice
- Fruit preserve or jam
- Fudge
- Honey
- Whole milk
- Plain, full fat yogurt
- Most packaged cereals
- Pasta made with white flour
- Table sugar

CHOOSING HEALTHY FOODS

Examples of

Complex Carbs:

- Apple
- Apricot
- Artichoke
- Asparagus
- Banana
- Blackberry
- Black current
- Blueberry
- Broccoli
- Brown rice
- Brussels sprout
- Buckwheat
- Buckwheat bread

Cabbage

Carrot

Cauliflower

Celery

Cherry

Cranberry

Cucumber

Dill pickle

Dried apricot

Eggplant

Garbanzo bean

Grapefruit

Kidney bean

Kiwi

Lemon

Lentils

Lettuce

Low fat yogurt

Lychee

Melon

Multi-grain bread

Museli

Navy bean

Oat bran bread and
cereal

Oatmeal

Okra

Onions

Orange

Peach

Pear

Pinto bean

Plum

Potato

Prune

Radish

Raspberry

Skim or low fat
milk

Spinach

Split pea

Soybean

Soy milk

Strawberry

Turnip green

Wild rice

Watercress

Whole barley

Whole meal bread

Whole meal flour

Whole meal pasta

Yam

Zucchini

CHOOSING HEALTHY FOODS

FATS

- **FATS** – Is a nutrient that provides energy and helps the body store and use vitamins. Fats provide more than twice the number of calories supplied by proteins and carbohydrates. Fats store and transport fat-soluble vitamins such as A,D,E and K. Fats are stored as fat tissue that surrounds and cushions internal organs.

CHOOSING HEALTHY FOODS

FATS

There are different types of fats. Can you name them?

- Unsaturated
- Saturated
- Trans Fats

Unsaturated Fats

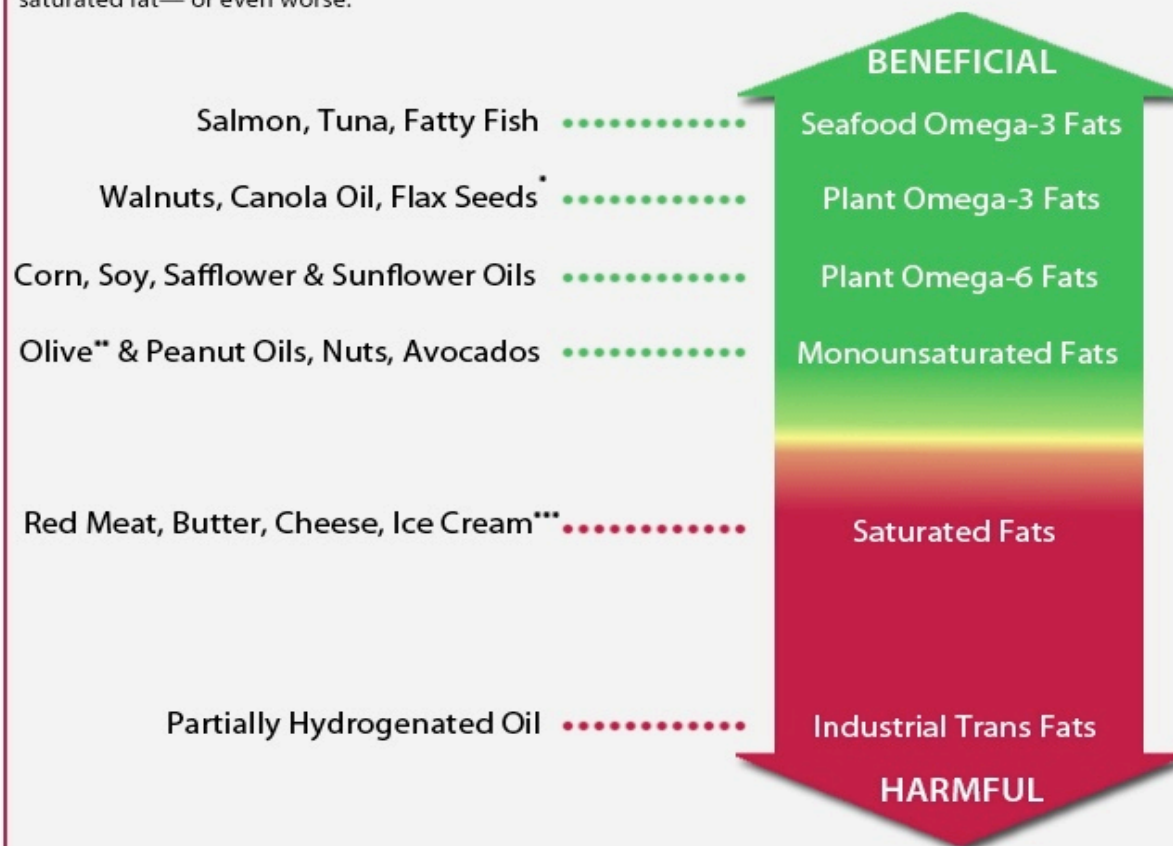
- **Unsaturated fats**
- Unsaturated fats, which are liquid at room temperature, are considered beneficial fats because they can improve blood cholesterol levels, ease inflammation, stabilize heart rhythms, and play a number of other beneficial roles. Unsaturated fats are predominantly found in foods from plants, such as vegetable oils, nuts, and seeds.
- There are two types of “good” unsaturated fats:
- **1. Monounsaturated fats** are found in high concentrations in:
 - Olive, peanut, and canola oils
 - Avocados
 - Nuts such as almonds, hazelnuts, and pecans
 - Seeds such as pumpkin and sesame seeds
- **2. Polyunsaturated fats** are found in high concentrations in
 - Sunflower, corn, soybean, and flaxseed oils
 - Walnuts
 - Flax seeds
 - Fish
 - Canola oil – though higher in monounsaturated fat, it’s also a good source of polyunsaturated fat.
- [Omega-3](#) fats are an important type of polyunsaturated fat. The body can’t make these, so they must come from food.
- An excellent way to get omega-3 fats is by eating fish 2-3 times a week.
- Good plant sources of omega-3 fats include flax seeds, walnuts, and canola or soybean oil.
- Higher blood omega-3 fats are associated with [lower risk of premature death](#) among older adults, according to a study by HSPH faculty.

Unsaturated Fats

- Most people don't eat enough healthful unsaturated fats. The American Heart Association suggests that 8-10 percent of daily calories should come from polyunsaturated fats, and there is evidence that eating more polyunsaturated fat—up to 15 percent of daily calories—in place of saturated fat can lower heart disease risk.
- Dutch researchers conducted an analysis of 60 trials that examined the effects of carbohydrates and various fats on blood lipid levels. In trials in which polyunsaturated and monounsaturated fats were eaten in place of carbohydrates, these good fats decreased levels of harmful LDL and increased protective HDL.
- More recently, a randomized trial known as the Optimal Macronutrient Intake Trial for Heart Health (OmniHeart) showed that replacing a carbohydrate-rich diet with one rich in unsaturated fat, predominantly monounsaturated fats, lowers blood pressure, improves lipid levels, and reduces the estimated cardiovascular risk.

FINDING FOODS WITH HEALTHY FATS

Some foods are rich in healthy fats—and some foods aren't. The healthiest: seafood, nuts, and oils, since they have omega-3 fats and other unsaturated fats. The harmful: red meat, butter, and ice cream, since they have too much saturated fat. The worst: partially hydrogenated oil, also known as "trans fat." So choose foods rich in healthy fats. Limit foods high in saturated fat. Avoid foods with trans fat. And don't eat foods like white bread, sugar, and potatoes in place of foods that have fat: Refined carbs and starches are just as bad for health as saturated fat— or even worse.



Keep in mind that all food fats contain a mix of different types of fats. Canola oil contains plant omega-3 fats, but also contains monounsaturated and some polyunsaturated fats. Soybean oil is a good source of plant omega-3 fats and omega-6 fats. Even healthy plant oils and other foods that are good sources of healthy fats (such as nuts, seeds, and fish) contain small amounts of saturated fat.

*Foods rich in plant omega-3 fats can fill a critical role in the diet when omega-3 fat intake from seafood is low; if seafood sources of omega-3 fats are abundant in the diet, the plant omega-3 fats may not add as much benefit.

**Extra-virgin olive oil is rich in antioxidants and likely has additional health benefits.

***Coconut and palm oils are high in saturated fat but may not have the same harmful health effects as saturated fat from red meat and butter.

Saturated Fats

- All foods containing fat have a mix of specific types of fats. Even healthy foods like chicken and nuts have small amounts of saturated fat, though much less than the amounts found in beef, cheese, and ice cream. Saturated fat is mainly found in animal foods, but a few plant foods are also high in saturated fats, such as coconut, coconut oil, palm oil, and palm kernel oil.
- The Dietary Guidelines for Americans recommends getting less than 10 percent of calories each day from saturated fat.
- The American Heart Association goes even further, recommending limiting saturated fat to no more than 7 percent of calories.
- Cutting back on saturated fat will likely have no benefit, however, if people replace saturated fat with refined carbohydrates. Eating refined carbohydrates in place of saturated fat does lower “bad” LDL cholesterol, but it also lowers the “good” HDL cholesterol and increases triglycerides. The net effect is as bad for the heart as eating too much saturated fat.
- In the United States, the biggest sources of saturated fat in the diet are
 - Pizza and cheese
 - Whole and reduced fat milk, butter and dairy desserts
 - Meat products (sausage, bacon, beef, hamburgers)
 - Cookies and other grain-based desserts
 - Mexican fast food dishes

Saturated Fats

- Though decades of dietary advice suggested saturated fat was harmful, in recent years that idea has begun to evolve. Several studies suggest that eating diets high in saturated fat do not raise the risk of heart disease, with one report analyzing the findings of 21 studies that followed 350,000 people for up to 23 years.
- Investigators looked at the relationship between saturated fat intake and coronary heart disease (CHD), stroke, and cardiovascular disease (CVD). Their controversial conclusion: “There is insufficient evidence from prospective epidemiologic studies to conclude that dietary saturated fat is associated with an increased risk of CHD, stroke, or CVD.”
- A well-publicized 2014 [study](#) questioned the link between saturated fat and heart disease, but HSPH nutrition experts determined the paper to be [seriously misleading](#). In order to set the record straight, Harvard School of Public Health convened a panel of nutrition experts and held a teach-in, [“Saturated or not: Does type of fat matter?”](#)
- The overarching message is that cutting back on saturated fat can be good for health *if people replace saturated fat with good fats*, especially, polyunsaturated fats. Eating good fats in place of saturated fat lowers the “bad” LDL cholesterol, and it improves the ratio of total cholesterol to “good” HDL cholesterol, lowering the risk of heart disease.
- Eating good fats in place of saturated fat can also help prevent insulin resistance, a precursor to diabetes. So while saturated fat may not be as harmful as once thought, evidence clearly shows that unsaturated fat remains the healthiest type of fat.

Vitamins & Minerals

- Vitamins and Minerals are considered essential nutrients—because acting in concert, they perform hundreds of roles in the body.
- They help shore up bones, heal wounds, and bolster your immune system. They also convert food into energy, and repair cellular damage.

Vitamins

- A **vitamin** is an organic compound and a vital nutrient that an organism requires in limited amounts. An organic chemical compound (or related set of compounds) is called a vitamin when the organism cannot synthesize the compound in sufficient quantities, and it must be obtained through the diet; thus, the term "vitamin" is conditional upon the circumstances and the particular organism.

Vitamins

- By convention the term *vitamin* includes neither other [essential nutrients](#), such as [dietary minerals](#), [essential fatty acids](#), or [essential amino acids](#) (which are needed in greater amounts than vitamins) nor the great number of other nutrients that promote health, and are required less often to maintain the health of the organism. [Thirteen vitamins](#) are universally recognized at present. Vitamins are classified by their biological and chemical activity, not their structure.

Vitamins

- Here's a short video on vitamins. Please make relevant notes:
 - [Vitamins](#)

Minerals

- A **mineral** is a chemical element required as an essential nutrient by organisms, other than carbon, hydrogen, nitrogen, oxygen and sulfur present in common organic molecules. These elements are classed as *minerals* in the four groups of essential nutrients; the others are vitamins, essential fatty acids, and essential amino acids.^{[1][2]}
- Major chemical elements in order of abundance in the human body include calcium, phosphorus, potassium, sodium, chlorine, and magnesium. Important trace elements, necessary for mammalian life, include iron, cobalt, copper, zinc, manganese, molybdenum, iodine, and selenium.

Minerals

- Here's a short video on Minerals:

- [Minerals](#)

Any Questions?